

REMARKS

Claims 1-64 were pending in the present patent application prior to entry of this amendment. Claims 1, 2, 5, 17, 20, 23, 45-47, 49, 51, 53, 59, and 60 are amended without prejudice to Applicants' rights to pursue such claims in a timely filed continuation or divisional application. Dependent claims 3, 21, 50, and 61 are cancelled, and new claims 65-72 are added by this amendment.

Paragraphs 60, 69, 75, 78, 81, 111, 122, and 141 are amended to correct typographical errors. The amendment does not introduce new matter and is otherwise proper. Support for the amendment is found throughout the application as filed including, but not limited to:

- Claim 1: Claim 1 as originally filed, [0050], [0055], [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 2: Claim 2 as originally filed;
- Claim 5: Claim 5 as originally filed;
- Claim 17: Claim 17 as originally filed, [0050], [0055] [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 20: Claim 20 as originally filed;
- Claim 23: Claim 23 as originally filed;
- Claim 45: Claim 45 as originally filed, [0050], [0055] [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 46: Claim 46 as originally filed;
- Claim 47: Claims 47, and 59 as originally filed, [0050], [0055] [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 49: Claims 47, 49, and 59 as originally filed;
- Claim 51: Claim 51 as originally filed;

- Claim 53: Claim 53 as originally filed;
- Claim 59: Claim 59 as originally filed;
- Claim 60: Claim 60 as originally filed, [0050], [0055] [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 65: Claims 47 and 59 as originally filed, [0050], [0055] [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 66: [0050], [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 67: Claims 47, 59, and 60 as originally filed;
- Claim 68: Claims 3, 21, 50, and 61 as originally filed;
- Claim 69: [0050], [0055] [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 70: [0050], [0088], [0099], [00102], [00103], [00131], [00147], and FIG. 10;
- Claim 71: Claims 63 and 64 as originally filed; and
- Claim 72: Claims 63 and 64 as originally filed.

Applicants respectfully request that the amendment be entered in its entirety. In view of the amendment and following remarks, reconsideration and withdrawal of the rejections and objections to the claims in the application is respectfully requested. Applicants believe that the application is now in condition for allowance.

**Rejection of Claims 1-4, 6-14, 16-22, 24-36, 43-61, and 63
Under 35 U.S.C. § 102(e)**

The Office Action rejects each of claims 1-4, 6-14, 16-22, 24-36, 43-61, and 63 under 35 U.S.C. § 102(e) for allegedly being anticipated by U.S. patent No. 6,284,197 (the “197 patent”) issued to Abbott *et al.* Applicants respectfully request that

the Examiner review the amendments to the claims and the following remarks and withdraw the rejection of the claims based on the '197 patent.

As set forth in § 2131 of the M.P.E.P., "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)." Applicants respectfully contend that the '197 patent does anticipate any of the claims of the present application because the cited reference fails to teach each and every element of any of the independent claims. For this reason, the rejection of each of the claims must fail.

A. Claims 1-64

1. Claims 1, 2, and 4-16

Independent claim 1 is directed to a device for detecting the presence of a compound in a sample. The device includes a self-assembled monolayer comprising an alkanethiol that has a functional group that reversibly or irreversibly interacts with the compound. As set forth in amended independent claim 1, the functional group of the alkanethiol "comprises a metal selected from the group consisting of Cd, Rb, K, Li, Cs, Ag, Au, Zn, Ti, Cr, Mn, Fe, Co, Ni, Zr, Nb, Ru, Rh, Hf, Ta, Re, Os, Ir, Pt, La, Sn, and Eu." Applicants respectfully contend that the '197 patent fails to teach any device for detecting compounds which includes an alkanethiol with a functional group that comprises any one of these metals. Because the reference fails to teach each and every element of independent claim 1, the rejection of this claim must fail. Dependent claims 2, and 4-16 each depend directly or indirectly from independent claim 1. Therefore, each of these dependent claims includes every limitation of claim 1. For this reason, these claims are also not anticipated by the '197 patent. Dependent claim 3 has been cancelled.

2. Claims 17, 18-20, and 22-44

Independent claim 17 is directed to a method for detecting the presence of a compound in a sample. The method includes "contacting a device for detecting the presence of a compound in a sample with the sample." The device includes a self-

assembled monolayer comprising an alkanethiol that has a functional group that reversibly or irreversibly interacts with the compound. As set forth in amended independent claim 17, the functional group of the alkanethiol “comprises a metal selected from the group consisting of Cd, Rb, K, Li, Cs, Ag, Au, Zn, Ti, Cr, Mn, Fe, Co, Ni, Zr, Nb, Ru, Rh, Hf, Ta, Re, Os, Ir, Pt, La, Sn, and Eu.” Applicants respectfully contend that the ‘197 patent fails to teach any device for detecting compounds which includes an alkanethiol with a functional group that comprises any one of these metals. Because the reference fails to teach each and every element of independent claim 17, the rejection of this claim must fail. Dependent claims 18-20, and 22-44 each depend directly or indirectly from independent claim 17. Therefore, each of these dependent claims includes every limitation of claim 17. For this reason, these claims are also not anticipated by the ‘197 patent. Dependent claim 21 has been cancelled.

3. Claims 45 and 46

Independent claim 45 is directed to a kit for detecting the presence of a compound in a sample. The kit includes an alkanethiol that has a functional group that reversibly or irreversibly interacts with the compound. As set forth in amended independent claim 45, the functional group of the alkanethiol “comprises a metal selected from the group consisting of Cd, Rb, K, Li, Cs, Ag, Au, Zn, Ti, Cr, Mn, Fe, Co, Ni, Zr, Nb, Ru, Rh, Hf, Ta, Re, Os, Ir, Pt, La, Sn, and Eu.” Applicants respectfully contend that the ‘197 patent fails to teach any device or kit for detecting compounds which includes an alkanethiol with a functional group that comprises any one of these metals. Because the reference fails to teach each and every element of independent claim 45, the rejection of this claim must fail. Dependent claim 46 depends from independent claim 45. Therefore, dependent claim 46 includes every limitation of claim 45. For this reason, claim 46 is also not anticipated by the ‘197 patent.

4. Claims 47-49, and 51-59

Independent claim 47 is directed to a method for manufacturing a device for detecting the presence of a compound in a sample. The method includes contacting an alkanethiol that has a functional group with the metallized surface of a support to form a self-assembled monolayer. Amended independent method claim 47 further

includes “contacting at least a first region of the self-assembled monolayer with a first metal salt to produce a first region with a first metal complex.” The metal of the metal complex is “selected from the group consisting of Cd, Rb, K, Li, Cs, Ag, Au, Zn, Ti, Cr, Mn, Fe, Co, Ni, Zr, Nb, Ru, Rh, Hf, Ta, Re, Os, Ir, Pt, La, Sn, and Eu.” Applicants respectfully contend that the ‘197 patent fails to teach any device or method for detecting compounds which includes a first or other region which includes or uses a metal complex comprising any one of these metals. Because the reference fails to teach each and every element of independent claim 47, the rejection of this claim must fail. Dependent claims 48, 49, and 51-59 each depend directly or indirectly from independent claim 47. Therefore, each of these dependent claims includes every limitation of amended independent claim 47. For this reason, these claims are also not anticipated by the ‘197 patent. Dependent claim 50 has been cancelled.

5. Claims 60, and 62-64

Independent claim 60 is directed to a device for detecting the presence of a compound in a sample. The device includes a surface with functional groups. As set forth in amended independent claim 60, the functional groups are bonded to a metal forming a metal complex where the metal “is selected from the group consisting of Cd, Rb, K, Li, Cs, Ag, Au, Zn, Ti, Cr, Mn, Fe, Co, Ni, Zr, Nb, Ru, Rh, Hf, Ta, Re, Os, Ir, Pt, La, Sn, and Eu.” Applicants respectfully contend that the ‘197 patent fails to teach any device for detecting compounds which includes a surface with functional groups that are bonded to any one of the metals cited in the amended claim. Because the reference fails to teach each and every element of independent claim 60, the rejection of this claim must fail. Dependent claims 62-64 each depend directly or indirectly from independent claim 60. Therefore, each of these dependent claims includes every limitation of independent claim 60. For this reason, these claims are also not anticipated by the ‘197 patent. Dependent claim 61 has been cancelled.

B. New Claims 65-72**1. Claims 65 and 66**

New independent claim 65 is similar to original independent claim 47 and original dependent claim 59 and is directed to a method for manufacturing a device for detecting the presence of a compound in a sample. The method includes contacting an alkanethiol that has a functional group with the metallized surface of a support to form a self-assembled monolayer. The method of new independent claim 65 also includes “contacting a first region of the self-assembled monolayer with a first metal salt to produce a first region with a first metal complex and contacting a second region of the self-assembled monolayer with a second metal salt different from that of the first metal salt to produce a second region of the self-assembled monolayer with a second metal complex that is distinct from the first region of the self-assembled monolayer.” Therefore, the method of independent claim 65 includes contacting at least two regions of the self-assembled monolayer with different metal salts to produce at least two regions with metal complexes which are distinct from one another. Applicants respectfully contend that the ‘197 patent fails to teach any device or method for manufacturing a device for detecting compounds which includes two or more regions with different metal complexes. Because the reference fails to teach each and every element of independent claim 65, the rejection of this claim must fail. Dependent claim 66 depends from independent claim 65. Therefore, dependent claim 66 includes every limitation of independent claim 65 and is also not anticipated by the ‘197 patent. New dependent claim 66 further specifies that the second metal complex is a Cd^{+2} carboxylate. The ‘197 patent simply fails to teach any device that includes a Cd^{+2} carboxylate. Therefore, for this additional reason, claim 66 is not anticipated by the ‘197 patent.

2. Claims 67-72

New independent claim 67 is similar to original independent claim 60 and original dependent claim 59 and is directed to a device for detecting the presence of a compound in a sample. The device includes a surface with functional groups. As set forth in new independent claim 67, “the functional groups are bonded to a first metal in a

first region forming a first metal complex and the functional groups are bonded to at least a second different metal in at least a second region of the surface forming at least a second metal complex.” Applicants respectfully contend that the ‘197 patent fails to teach any device or method for manufacturing a device for detecting compounds which includes two or more regions with different metal complexes. Because the reference fails to teach each and every element of independent claim 67, the rejection of this claim must fail. Dependent claims 68-72 each depend from independent claim 67. Therefore, dependent claims 68-72 include every limitation of independent claim 67 and are also not anticipated by the ‘197 patent. New dependent claim 69 further specifies that the second metal complex comprises “a metal selected the group consisting of Cd, Rb, K, Li, Cs, Ag, Au, Zn, Ti, Cr, Mn, Fe, Co, Ni, Zr, Nb, Ru, Rh, Hf, Ta, Re, Os, Ir, Pt, La, Sn, and Eu.” As noted above, the ‘197 patent simply fails to teach any device that includes any one of these metals. Therefore, for this additional reason, claim 69 is not anticipated by the ‘197 patent. New dependent claim 70 further specifies that the second metal complex is a Cd^{+2} carboxylate. The ‘197 patent simply fails to teach any device that includes a Cd^{+2} carboxylate. Therefore, for this additional reason, claim 70 is not anticipated by the ‘197 patent.

Objection of Claims 5, 15, 23, 37-42, 62, and 64

The Office Action objects to each of claim 5, 15, 23, 37-42, 62, and 64 as depending from a rejected base claim. The Office Action notes that these claims would be allowable if rewritten in independent form to include all the limitations of the rejected based claim and any intervening claims.

Applicants thank Examiner Cole for indicating the allowable subject matter. As indicated above, each of the independent claims has been amended. Applicants respectfully contend that the amended claims are all allowable in view of the cited reference. For this reason, Applicants believe that each of the objections of the above-noted claims has been addressed. Applicants respectfully request that the Examiner reconsider the claims in view of the amendments and remarks noted above and note that the objections have been overcome with respect to this application.

CONCLUSION

In view of the amendment and the above remarks, it is respectfully submitted that all rejections and objections have been overcome. The Examiner is cordially invited to telephone the undersigned at the number listed below if the Examiner believes such would be helpful in advancing the application to issuance.

Respectfully submitted,

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